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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/730,233	12/08/2003	Fathi Hassan Ghorbel	1789-08603	2522

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EXAMINER

MCCARRY JR, ROBERT J

ART UNIT

PAPER NUMBER

3617

DATE MAILED: 08/11/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

## Office Action Summary

Application No.

10/730,233

Applicant(s)

GHORBEL ET AL.

Examiner

Robert J. McCarry, Jr.

Art Unit

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 25 May 2005.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-26 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 7-10 and 20-23 is/are allowed.
- 6) ☒ Claim(s) 1-6, 11-19 and 24-26 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- ☒ Notice of References Cited (PTO-892)
- ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date 5/25/05
- ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_
- ☐ Notice of Informal Patent Application (PTO-152)
- ☐ Other: \_\_\_\_\_

## DETAILED ACTION

### ***Claim Rejections - 35 USC § 102***

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1-6, 11, 12, 15-19 and 24 are rejected under 35 U.S.C. 102(b) as being anticipated by Simpson et al (US 5,649,603).

Simpson et al discloses a device for traversing a conduit. The Examiner has relied on the embodiment shown in figure 10. The embodiment in figure 10 is the same basic structure as claim 9 with the exception if the forward rollers 716. The device is comprised of a first section 808 having pitched wheels oriented such that each of their axes defines a pitch axle that is greater than zero degrees and less than ninety degrees. While the pitched wheel is not numbered in figure 10 it is clearly shown in figure 6. The wheel assembly 626 sits at an angle in relation to the longitudinal axis of the device. Since the wheels are not exactly neither parallel nor perpendicular to the device it is understood that they are situated at an angle greater than zero degrees but less than ninety degrees. A motor 802, installed in motor housing 804, causes the rotation of section 808 in relation to section 830. With the rotation of section 808 the pitched wheels work to propel the vehicle through the conduit. Sets of pitched wheels are positioned at different points along the length of the vehicle. As shown in figure 10, there is a set of wheels on section 808 and another set on section 812. On each section

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808 and 812, the wheels are positioned at different points around the axis of the vehicle. The wheels are also positioned in the same azimuthal position about the vehicle. As shown in figure 10, the top wheel is in a mirrored position in respect to the bottom wheel. The entire set of wheels makes up a helical row around the vehicle and are equipped with wear resisting inserts 634 forming notched traction surfaces as shown in figure 6. The pitched wheels shown in figure 10 are shown to be positioned 180 degrees from each other. While claim 6 calls for the adjacent wheels to be 180 degrees apart, the Examiner has interpreted, based on dictionary definition, that the top and bottom pitched wheels are adjacent since they are close to one another and do not necessarily need to be next to each other to be adjacent. The device is further comprised of a fluid tube 718 for moving fluid through an internal passageway of the vehicle without the fluid having to pass between the outer diameter of the vehicle and the inner diameter of the conduit. The fluid through the tube 718 provides power to the hydraulic motor.

***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 13, 14, 25 and 26 are rejected under 35 U.S.C. 103(a) as being unpatentable over Simpson et al (US 5,649,603) in view of Ng et al (US 6,162,171).

Simpson discloses a device for traversing a conduit as described above.

However, Simpson et al does not disclose the use of a plurality of optical encoders nor

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does Simpson et al discloses that the robot be no more than six inches in diameter. Ng et al discloses a robotic endoscope for performing procedures in tubular organs, mostly human organs. The device is comprised of a plurality of optical fibers to provide a light source and an imaging device to relay images of the interior of the organ. It would have been obvious to one of ordinary skill in the art to have applied the optical devices, like that of Ng et al to a device like that of Simpson et al in order to provide light to the interior of the conduit and to provide images back to the user of the device of the interior of the conduit so as to facilitate repairs. It also would have been obvious to one of ordinary skill to understand that in order for a device, like that of Ng et al to fit inside a human organ it would be no more than six inches in diameter and in most cases substantially smaller.

***Allowable Subject Matter***

Claims 7-10 and 20-23 are allowed.

***Response to Arguments***

Applicant's arguments filed May 25, 2005 have been fully considered but they are not persuasive. Applicant states that the prior art of Simpson et al does not show wheels positioned at different points along the length of the robot. As described above the prior art does in fact show sets of wheels mounted at points along the length of the robot. Sets of pitched wheels are positioned at different points along the length of the vehicle. As shown in figure 10, there is a set of wheels on section 808 and another set on section 812. The set of wheels on section 808 are set in an azimuthally position and the same is said for the wheels on section 812.

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### **Conclusion**

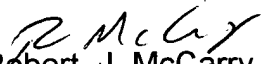
The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Molaug (US 5,749,397), McKay et al (US 6,035,786) and Comello et al (US 6,339,993) all disclose types of vehicle for moving through conduits.

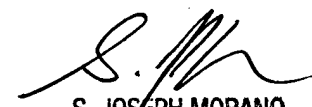
Any inquiry concerning this communication or earlier communications from the examiner should be directed to Robert J. McCarry, Jr. whose telephone number is (571) 272-6683. The examiner can normally be reached on Monday through Friday 7:00am to 3:00pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, S. Joseph Morano can be reached on (571) 272-6684. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

RJM  
July 25, 2005

  
Robert J. McCarry, Jr.  
Examiner  
Art Unit 3617

  
S. JOSEPH MORANO  
SUPERVISORY PATENT EXAMINER  
TECHNOLOGY CENTER 3600